ATTACHMENT NOT INCLUDED

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 6
1445 ROSS AVENUE, SUITE 1200
DALLAS, TX 75202-2733

MEMORANDUM

DATE:

SUBJECT: Request for a Removal Action at the Lithium of Lubbock Site, Lubbock, Lubbock County, Texas

FROM: Gregory E. Fife
On-Scene Coordinator
Removal/Site Section (6E-ES)

TO: Russell F. Rhoades
Division Director
Environmental Services Division (6E)

THRU: Charles A. Gazda
Chief
Emergency Response Branch

Site ID #3X

I. PURPOSE

The purpose of this Action Memorandum is to request and document approval of the proposed removal action described herein for the Lithium of Lubbock Site, Lubbock, Lubbock County, Texas. This Action Memorandum also documents the verbal approval given on June 18, 1992, by the Acting Director of the Environmental Services Division for the emergency response action taken at the site.

II. SITE CONDITIONS AND BACKGROUND

CERCLIS # TXD988072757

Category of removal: Classic Emergency

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A. Site Description

1. Removal site evaluation

The Emergency Response Branch (ERB) was notified of the conditions at the site by the Texas Water Commission (TWC) on June 18, 1992. TWC requested ERB assistance in the matter, since the magnitude of the situation was large and generally beyond the TWC funding capabilities. A fire involving lithium batteries occurred on June 8, 1992 in an active warehouse. The fire appears to have been caused from a leak in the warehouse roof. The lithium batteries are water reactive and to a lesser extent air reactive. The batteries have exceeded the shelf life indicated on packaging by up to 10 years. The batteries have deteriorated and reacted quickly with the water from the automatic fire sprinkler system and the fire-fighting water. Information gained during the initial investigations by TWC indicated the presence of 160 tons of batteries and other hazardous substances at the site. Since the initial fire, the Lubbock Fire Department has responded to additional fires resulting from the spontaneous ignition of several additional batteries. The lithium batteries are in extremely poor conditions and reactions are taking place throughout the containers. The combustion in the batteries creates toxic gases such as sulfuric acid.

2. Physical location

The site is located at 2301 Avenue C in the City of Lubbock. The area where the site is situated is a warehouse district. Food distribution warehouses surround the site. Cotton gins border the warehouses to the east. The site is a few blocks away from several major cross streets. A farmers' market, which is heavily visited on weekends, is located within two blocks. It is difficult to estimate the number of people in the vicinity at any one time, but the number may exceed several hundred.

3. Site characteristics

The site is one bay of a wooden, multiple bay, block long warehouse. The bay is approximately 60 feet by 200 feet. Drums, pallets, and crates of lithium, mercury, zinc, carbon, and nickel/cadmium batteries are stacked in the warehouse. Several of the drums and pallets which were involved in the fire were brought out of the warehouse and staged by the Lubbock Fire Department (LFD). Several of the containers, inside and outside, were damaged by the fire and fire-fighting activities. Berms were constructed by the LFD to contain water run-off and the polyethylene sheeting was used to cover the containers outside.

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4. Releases or threatened release into the environment of a hazardous substance, pollutant or contaminant

Lithium batteries identified at the site which are spontaneously combusting are mixtures of lithium thionyl chloride, lithium bromide, organic lithium, and other combinations. The reaction products of the batteries include hydrogen, sulfuric acid and hydrochloric acid gases. The combustion products are toxic gases such as hydrogen sulfide. The fires could initiate the release of hazardous materials in the other batteries such as cadmium and mercury.

The manifest associated with the shipment of the batteries to the Lubbock warehouse list the EPA Hazardous Waste Numbers of D002 (corrosive), D003 (reactive), D007 (chromium) and D009 (mercury). The manifest and hazardous waste labels indicate that the batteries and other materials are hazardous wastes according to 40 CFR Section 261 Subpart C.

There are also 100 to 150 drums of unknown materials which are labeled as being battery parts and "tray sludge".

5. NPL status

The site is not on the NPL and has not been ranked. It is not expected that the site would qualify for the NPL. If the proposed action is completed, no additional threats to public health or welfare, or the environment are expected to remain.

6. Maps, Pictures and other graphic representations

Attachment 1 Enforcement Addendum
Attachment 2 Schematic Lubbock map

B. Other Actions to Date

1. Previous actions

Following the June 18, 1992 verbal approval by the Acting ESD Director, the EPA Emergency Response Clean-up Services Contractor (ERCS) was immediately mobilized and began the emergency response action at the site. The action consisted of repackaging or overpacking the lithium batteries in clean dry transformer oil. The oil acts to separate the lithium from the water and air thereby stopping the reaction and oxygen and ignition source.

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2. Current actions

Crews continue to pack the lithium batteries in oil to stop the reactions and eliminate the fire hazard. Information on the contents of the containers and the batteries is being collected. Air monitoring is being conducted at the perimeter to indicate any immediate off-site threat. Enforcement information is being obtained and forwarded to appropriate EPA personnel.

C. State and Local Authorities' Roles

1. State and local actions to date

The City of Lubbock Fire Department brought the initial fire on June 8 under control. Since then several fires have occurred as the result of the damaged batteries spontaneously combusting. Fires have been extinguished using soda ash to smother the flames. LFD constructed berms to prevent the potentially contaminated fire-fighting water from leaving the site. LFD has taken additional steps in an attempt to stabilize the batteries.

The Lubbock Water Utilities, which is responsible for the city's hazardous waste situations, has conducted enforcement activities to try to initiate clean-up by several involved parties. The Water Utilities have provided equipment and services to EPA crews in support of the response. The Water Utilities and TWC have been instrumental in responding to media interest.

The TWC has conducted an extensive search for potential responsible parties, but TWC was unable to contact any viable parties willing to undertake the clean-up. TWC has taken and analyzed samples of the fire-fighting water and soil under the water. These samples indicate contaminant levels below regulatory concerns. Although, the Lubbock Water Utilities' sample indicates elevated mercury in the water. Samples will be taken to confirm the analysis. TWC has also provided extensive technical information and assistance.

2. Potential for continued State/local response

The magnitude of the situation and the cost of the clean-up are beyond the capabilities of the funds available to TWC and City of Lubbock.

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III. THREATS TO PUBLIC HEALTH OR WELFARE OR THE ENVIRONMENT, AND STATUTORY AND REGULATORY AUTHORITIES

A. Threats to Public Health or Welfare

There exists an actual or potential exposure to hazardous substances or pollutants or contaminants of nearby populations or the food chain. The reactions involving lithium and water or air release acid gases, hydrogen and toxic vapors. These gases and vapors could expose the employees of the adjacent warehouses and businesses. Several of the warehouses surrounding the site are food warehouses. The released hazardous substances could contaminate the food products at these warehouses and a nearby farmers' market.

There are approximately 160 tons of batteries and other hazardous substances in bulk storage containers that pose a threat of release. The battery casings within the drums, crates and on pallets are corroding and deteriorating allowing the exposure of the lithium to water and air. The resulting reaction can release acid gases, hydrogen and toxic vapors. The batteries may release mercury, cadmium and other heavy metals due to the deterioration of these batteries.

Weather conditions have caused hazardous substances to be released. The fire on June 8 was apparently started when rainwater leaked through the roof and on to the lithium batteries causing the reactions and the auto-ignition. Since the initial fire, Lubbock has been placed under 5 Tornado Watches, 1 Tornado Warning and 6 Severe Thunderstorm Warnings. Rainwater has contacted and reacted with the fire damaged lithium batteries and resulted in additional fires and releases of hazardous substances.

There is a demonstrated threat of fire and explosion. The fire on June 8 released acid gases, hydrogen and toxic vapors. The LFD has responded to several subsequent fires. The effect of fire may also cause the release of other hazardous substances such as mercury, cadmium and chromium. Several tons of batteries containing these heavy metals are stored in the warehouse.

B. Threats to the Environment

There exists an actual or potential exposure to hazardous substances or pollutants or contaminants by nearby animals or the food chain. As previously discussed, the reactions involve lithium and water or air release acid gases, hydrogen and toxic vapors. These gases and vapors could contaminate the store of cotton gin by-products which could be used as livestock feed.

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IV. ENDANGERMENT DETERMINATION

Actual or threatened releases of hazardous substances, pollutants or contaminants from this site, if not addressed by implementing the response action selected in this Action Memorandum, may present an imminent and substantial endangerment to the public health, welfare, or the environment.

V. PROPOSED ACTIONS AND ESTIMATED COSTS

A. Proposed Actions

1. Proposed action description

The action being taken at the site includes the repackaging of the damaged and deteriorating lithium batteries. These batteries are placed in drums containing dry transformer oil (no PCBs). The oil eliminates the contact of lithium with water or air. The other batteries will be stabilized or repacked as appropriate. Crews will be categorizing, identifying and sampling the batteries and unknown materials in drums and crates. Other treatments or stabilization activities such as neutralizing or solidifying may be necessary to accomplish proper disposal of the materials. The urgency of the situation has not allowed for a complete investigation of all aspects of the site. Investigation is ongoing with the current response. All materials from the site will be disposed of at a facility in full compliance with all State and Federal Regulations, including EPA's Off-site Policy. Perimeter air monitoring will be continued to identify the immediate threat to the health of surrounding public. Special measures have been taken to respond to the possibility of fires, including fire resistent clothing, special fire extinguisher and fire blankets. Small fires involving a limited number of batteries are expected during the repacking activities.

2. Contribution to remedial performance

This action is expected to complete the response at this site. No remedial action is expected.

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3. Description of alternative technologies

One alternative technology has been presented but due to the urgency of the situation and the large number of unknowns, the alternative was declined. The technology involved the reacting of thionyl chloride, scrubbing the produced acid gases and recovering the lithium. Time and location do not allow for this alternative.

4. Applicable or relevant and appropriate requirements

This removal action will be conducted to eliminate the threat or potential threat of a hazardous substance, pollutant or contaminant pursuant to CERCLA, 42 U.S.C § 9601 et seq., and in a manner consistent with the National Contingency Plan, 40 CFR Part 300, as required at 33 U.S.C. § 1321(c)(2) and 42 U.S.C. § 9605.

As per 40 CFR § 300.415(i), fund-financed removal actions under CERCLA Section 104 and removal actions pursuant to CERCLA Section 106 shall to the extent practicable considering the exigencies of the situation, attain the applicable or relevant and appropriate requirements under Federal environmental law, including, but not limited to, the Safe Drinking Water Act (SWDA), 42 U.S.C. § 300 et seq., the Clean Air Act (CAA), 42 U.S.C. §7401 et seq., the Resource Conservation and Recovery Act, 42 U.S.C. § 6901 et seq., or any promulgated standard, applicable or relevant and appropriate requirements, criteria, or limitation under a State environmental or facility siting law that is more stringent than any federal standard, requirement, criteria, or limitation contained in a program approved, authorized or delegated by the Administrator and identified to the President by the State.

5. Project schedule

The classic emergency removal action has been undertaken. The stabilization of the batteries is expected to be completed within one month of initiation. Arrangements for disposal of the material are being made. Actual disposal is dependant on the disposal facilities' capability to accept the material. Based on recent disposal actions, approximately two months may be required to sample, analyze, profile, contract, and arrange for disposal. Some treatment may be necessary to accomplish disposal and the amount of time for the treatment can not be predicted accurately at this time.

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B. Estimated Costs

Extramural Costs

ERCS	$1,000,000
TAT	$250,000
Subtotal, Extramural Costs	$1,250,000
Extramural Costs Contingency (20%)	$250,000
TOTAL, EXTRAMURAL COSTS	$1,500,000

Intramural Costs

EPA Direct Costs	$70,000
EPA Indirect Costs	$210,000
TOTAL, INTRAMURAL COSTS	$280,000
TOTAL, REMOVAL PROJECT CEILING	**$1,780,000**

VI. EXPECTED CHANGE IN THE SITUATION SHOULD ACTION BE DELAYED OR NOT TAKEN

If action is not taken or continued, the batteries will continue to deteriorate. The lithium batteries will spontaneously combust. Mercury, cadmium, chromium and other hazardous substances, pollutants, or contaminants will be released from the other deteriorating batteries. Fires may spread to the adjacent businesses such as the cotton ginning operations.

VII. OUTSTANDING POLICY ISSUES

There are no outstanding policy issues associated with this site of the proposed clean-up.

VII. ENFORCEMENT

See attachment 1.

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IX. RECOMMENDATION

This decision document represents the selected removal action for the Lithium of Lubbock site, in Lubbock, Texas, developed in accordance with CERCLA as amended, and not inconsistent with the NCP. This decision is based on the administrative record for the site. Conditions at the site meet the NCP section 300.415(b)(2) criteria for a removal and I recommend your approval of the proposed removal action. The total project ceiling if approved will be $1,780,000. Of this, an estimated $1,000,000 comes from the Regional removal allowance.

APPROVED _____ DATE: 7/7/92

DISAPPROVED _____ DATE: _____

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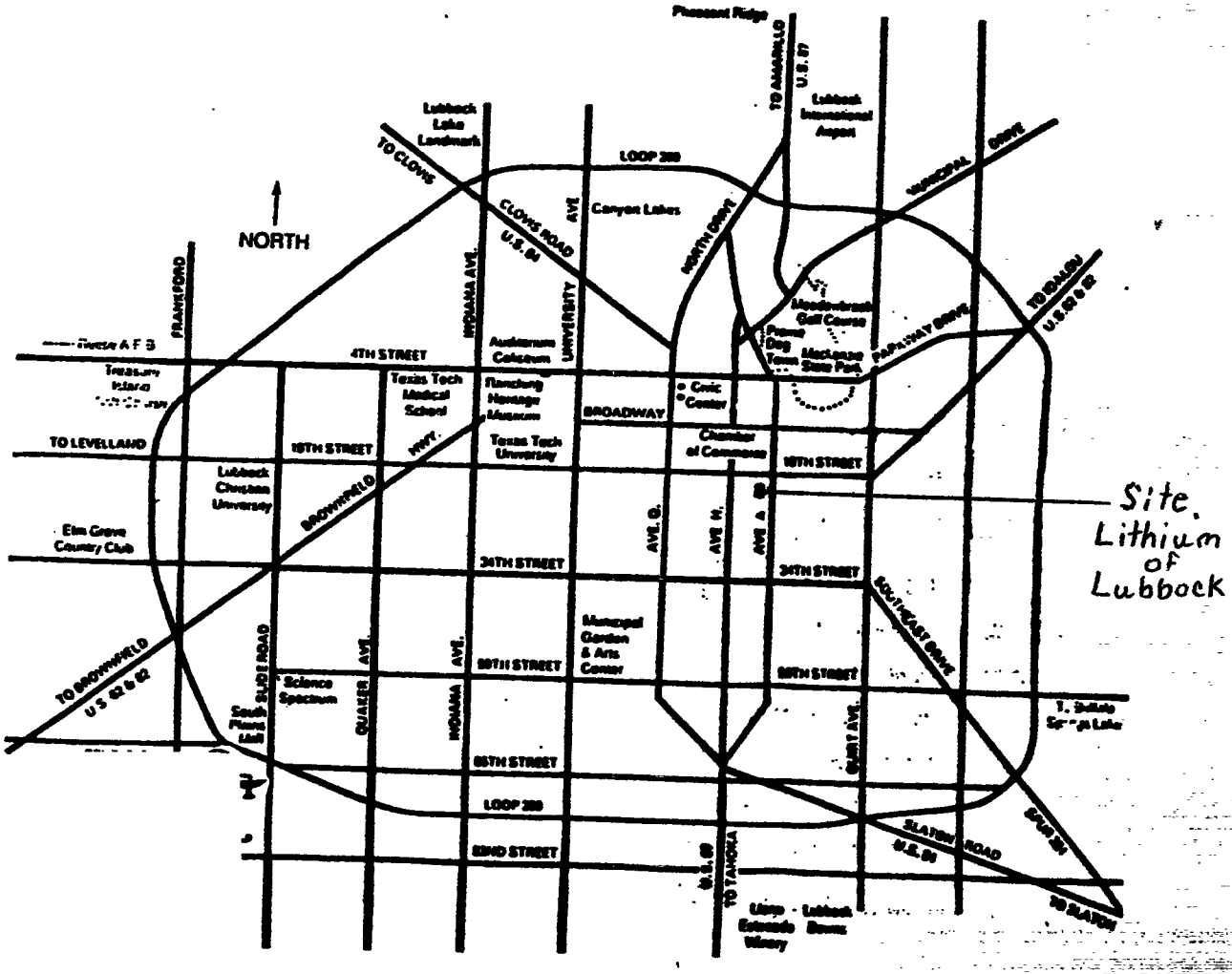

Attachment 2

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CONFIDENTIAL DOCUMENT

LOCATED IN A SEPARATE, CONFIDENTIAL FILE

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